Remarks

In view of the following discussion, the applicants submit that the claims now pending in the application are not anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form.

REJECTIONS

A. 35 U. S. C. § 102

1. Claim 1 is not anticipated by Dorman et al.

Claim 1 stands rejected under 35 U. S. C. § 102(b) as being anticipated by Dorman et al. (U. S. Patent 4,254,331 issued on March 3, 1981). The applicants submit that this claim is not anticipated by this reference.

Claim 1 is directed to a device for compensating for fluctuations in the light which is emitted by a light source and propagates along a light path, in particular in a film scanner (*see*, specification at page 1, lines 6-9). Ideal film scanners illuminate or transilluminate cinematographic films with a light source that produces light which is constant over time with intensity and spectrum as well as across a cross-section of the light beam. The cinematographic film modulates the light according to the content of the images and sensors pick up the modulated light to form an electrical signal representing the images. The sensors provide images having a desired image resolution. Real-world light sources, however, do not produce light that is constant over time, neither with respect to intensity or spectrum, nor with respect to the distribution thereof across a cross-section of the light beam. The fluctuations of the light emitted by the light source are picked up by the sensors that produce the electrical signals representing the images. The sensor, however, cannot distinguish between light modulated by the

cinematographic film or by fluctuations of the light source. Fluctuations of the light source, therefore, affect the electrical signals representing the images in an unwanted way. It is known from the prior art, as presented in U. S. Patent 6,219,140 and discussed in the section entitled "Background of the Invention", to provide a second sensor for detecting fluctuations in the spectral distribution of light (*see*, specification at page 1, lines 32-33). Claim 1 recites providing a first sensor 27 and a second sensor 28 which each detect the intensity of light at first and second locations in a spatially resolved manner and generate respective first and second electrical image signals (*see*, FIG. 2a and the specification at page 8, lines 1-20). An evaluation circuit (*see*, FIG. 3) corrects the first electrical image signal based on the second electrical image signal to compensate for fluctuations in light intensity across the a cross-section of the beam of light (*see*, FIGS. 4a-4d and the specification at page 9, line 19 to page 10, line 32).

Dorman et al. discloses a fiber optic proximity measuring instrument for measuring the distance to an object (*see*, Dorman et al. at column 1, lines 5-9). The fiber optic proximity measuring instrument injects light into a first end 14 of an optical fiber to direct light onto a target surface 18 (*see*, Dorman et al. at FIG. 1 and column 2, lines 32-34). The light reflected from the target surface 18 is coupled back into the optical fiber and the intensity of the reflected light is measured at a second end of the optical fiber 19 by a single sensor 20 (*see*, Dorman et al. at FIG. 1 and column 2, lines 39-41). The measured signal from the sensor 20 is amplified by an amplifier 23 and output to an oscilloscope 25 (*see*, Dorman et al. at FIG. 1 and column 2, lines 42-49).

Dorman et al. does not describe or suggest a device for compensating for fluctuations in the light which is emitted by a light source including first and second sensors which each detect the intensity of light at first and second locations in a spatially resolved manner and generate respective first and second electrical image signals, where an evaluation circuit corrects the first electrical image signal based on the second electrical image signal to compensate for fluctuations in light intensity across the a cross-section of the emitted beam of

light. Rather, Dorman et al. teaches a completely different arrangement in which a fiber optic proximity measuring instrument for measuring the distance to an object injects light into a first end of an optical fiber to direct light onto a target surface, couples the light reflected from the target surface back into the optical fiber and the intensity of the reflected light is measured at a second end of the optical fiber by a single sensor, amplified by an amplifier and output to an oscilloscope. Since Dorman et al. does not describe or suggest a device for compensating for fluctuations in the light which is emitted by a light source including first and second sensors which each detect the intensity of light at first and second locations in a spatially resolved manner and generate respective first and second electrical image signals, where an evaluation circuit corrects the first electrical image signal based on the second electrical image signal to compensate for fluctuations in light intensity across the a cross-section of the emitted beam of light, claim 1 is patentable over Dorman et al.

B. 35 U. S. C. § 103

1. Claims 2-8 and 14 are not obvious over Dorman et al.

Claims 2-8 and 14 stand rejected under 35 U. S. C. § 103(a) as being obvious over Dorman et al. (U. S. Patent 4,254,331 issued on March 3, 1981). The applicants submit that this claim is not rendered obvious by this reference.

Claims 2-8 and 14 depend directly, or indirectly from claim 1 which is directed to a device for compensating for fluctuations in the light which is emitted by a light source and propagates along a light path, in particular in a film scanner (*see*, specification at page 1, lines 6-9). Ideal film scanners illuminate or transilluminate cinematographic films with a light source that produces light which is constant over time with intensity and spectrum as well as across a cross-section of the light beam. The cinematographic film modulates the light according to the content of the images and sensors pick up the modulated light to form an

electrical signal representing the images. The sensors provide images having a desired image resolution. Real-world light sources, however, do not produce light that is constant over time, neither with respect to intensity or spectrum, nor with respect to the distribution thereof across a cross-section of the light beam. The fluctuations of the light emitted by the light source are picked up by the sensors that produce the electrical signals representing the images. The sensor, however, cannot distinguish between light modulated by the cinematographic film or by fluctuations of the light source. Fluctuations of the light source, therefore, affect the electrical signals representing the images in an unwanted way. It is known from the prior art, as presented in U. S. Patent 6,219,140 and discussed in the section entitled "Background of the Invention", to provide a second sensor for detecting fluctuations in the spectral distribution of light (*see*, specification at page 1, lines 32-33). Claims 2-8 and 14 recite providing a first sensor 27 and a second sensor 28 which each detect the intensity of light at first and second locations in a spatially resolved manner and generate respective first and second electrical image signals (*see*, FIG. 2a and the specification at page 8, lines 1-20). An evaluation circuit (*see*, FIG. 3) corrects the first electrical image signal based on the second electrical image signal to compensate for fluctuations in light intensity across the a cross-section of the beam of light (*see*, FIGS. 4a-4d and the specification at page 9, line 19 to page 10, line 32).

Dorman et al. discloses a fiber optic proximity measuring instrument for measuring the distance to an object (*see*, Dorman et al. at column 1, lines 5-9). The fiber optic proximity measuring instrument injects light into a first end 14 of an optical fiber to direct light onto a target surface 18 (*see*, Dorman et al. at FIG. 1 and column 2, lines 32-34). The light reflected from the target surface 18 is coupled back into the optical fiber and the intensity of the reflected light is measured at a second end of the optical fiber 19 by a single sensor 20 (*see*, Dorman et al. at FIG. 1 and column 2, lines 39-41). The measured signal from the sensor 20 is amplified by an amplifier 23 and output to an oscilloscope 25 (*see*, Dorman et al. at FIG. 1 and column 2, lines 42-49).

Dorman et al. does not describe or suggest a device for compensating for fluctuations in the light which is emitted by a light source including first and second sensors which each detect the intensity of light at first and second locations in a spatially resolved manner and generate respective first and second electrical image signals, where an evaluation circuit corrects the first electrical image signal based on the second electrical image signal to compensate for fluctuations in light intensity across the a cross-section of the emitted beam of light. Rather, Dorman et al. teaches a completely different arrangement in which a fiber optic proximity measuring instrument for measuring the distance to an object injects light into a first end of an optical fiber to direct light onto a target surface, couples the light reflected from the target surface back into the optical fiber and the intensity of the reflected light is measured at a second end of the optical fiber by a single sensor, amplified by an amplifier and output to an oscilloscope. Since Dorman et al. does not describe or suggest a device for compensating for fluctuations in the light which is emitted by a light source including first and second sensors which each detect the intensity of light at first and second locations in a spatially resolved manner and generate respective first and second electrical image signals, where an evaluation circuit corrects the first electrical image signal based on the second electrical image signal to compensate for fluctuations in light intensity across the a cross-section of the emitted beam of light, claims 2-8 and 14 are patentable over Dorman et al.

CONCLUSION

The applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form and this application is presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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